

ON A COLLECTION OF LAND AND FRESH WATER
SHELLS, FROM QUEENSLAND

BY C. HEDLEY, F.L.S., AND C. T. MUSSON, F.L.S.

Through the kindness and liberality of Dr. J. C. Cox, F.L.S., one of the writers, Mr. Musson, was enabled to spend a few months during the year 1887 searching for mollusca in South Queensland. The visit chanced to be when a prolonged drought, followed by disastrous floods, had greatly reduced the invertebrate population. Many species are thus only represented in Mr. Musson's collection by dead shells. Others in the lapse of time have been lost or mislaid, among them a slug discovered twice at Miriam Vale, first under a log near the head station and then on a ridge near Colosseum Creek, and again under Mt. Mee, North Pine River. It is described in the collector's note-book as, "one inch long, dark in colour, with sole of foot light except the rim which was dark, sharply keeled, hard and leathery." We are disposed to conjecture that this animal was *Atopos australis*, Heyneman.

The route pursued was as follows:—From Gladstone, reached August 8th, as a centre various points in the Port Curtis district were investigated, and Miriam Vale, Warro, Rodds Bay, Boyne, Facing and Curtis Islands were visited in succession. Rockhampton was then made the base of operations, and part of September and October was spent in collecting over the Berseker Range (one of whose highest summits is Mt. Archer), Gracemere, Mt. Morgan, and Olsen's Caves; shells from a subfossil deposit in the latter will be quoted as (c) in the following list. A trip west was also made to Jericho, Alpha, and Bogantungan via Coomooboolaroo. Leaving Rockhampton on October 12th, an overland journey to Brisbane was commenced by way of Westwood, Calliungal on the

River Dee, Torsdale on Prospect Creek, and Prairie Station on Kroombit Creek. Crossing to the Burnett watershed Cania was reached, the Three Moon Creek, Cania Station and Dalgangal passed in succession, and the traveller arrived at Gayndah on November 10th. Thence a course was shaped via Banban on the Barambah River, Boobeyjan and Kilkivan to Gympie. Two localities in this neighbourhood were searched and will be quoted in the following list as (a) a scrub nine miles north, and (b) another scrub at Blackfellow's Creek, twenty-seven miles south of the town. In continuation of the journey the Mary River was followed from Kenilworth to its source, and the summit of the Blackall Range attained by way of Canondale. After passing Durundu and Caboolture a trip was made up the North Pine River, and the rich scrubs around Mt. Mee were examined. This tour was then concluded, and Brisbane reached on December 6th.

The conchological booty was as follows :—

HELICARION ROBUSTUS, Gould.

Everywhere common under stones and logs ; varies in size and colour.

Miriam Vale, Warro, Curtis Island, Olsen's Caves, Mt. Archer, Rockhampton, Calliungal, Cania, Banban, Kilkivan, Durundu, Gympie (a) and (b), and North Pine River.

THALASSIA PUDIBUNDA, Cox.

Scarce.

North Pine River.

T. MORETONENSIS, Pfeiffer.

One specimen collected.

Mt. Archer.

T. RUSTICA, Pfeiffer.

Under logs and stones usually in open country, sometimes in scrubs, plentiful in places ; widely distributed.

Warro, Mt. Archer, Gracemere, Cania, Banban, Kilkivan, Gympie (a), and Kenilworth.

A variety darker in colour, and having spiral lines more distinctly marked than the type, was found at Miriam Vale, Bogantungan, Torsdale and Cania.

T. DELTA, Pfeiffer.

In scrubs, arboreal ; scarce.
North Pine River.

CONULUS TURRICULATUS, Cox.

Fairly plentiful.
Miriam Vale and Cania.

CHAROPA OMICRON, Pfeiffer.

Under logs in damp places ; not plentiful.
Miriam Vale, Warro, Cania, Gympie and North Pine River.

C. IULOIDEA, Forbes.

Scarce.
Warro, Gracemere and Olsen's Caves (c).

C. FUNEREA, Cox.

Cania, Kilkivan.

LIMAX LÆVIS, Müller.

Miriam Vale, Brisbane and Kilkivan.

RHYTIDA WALKERI, Gray.

Under logs and stones in scrubs ; widely distributed but nowhere very abundant.

Miriam Vale, Warro, Curtis Island, Mt. Archer, Gracemere, Olsen's Caves, Calliungal, Torsdale, Cania, Banban, Gympie (a) and (b), Kenilworth, and North Pine River.

R. SPLENDIDULA, Pfeiffer.

Under logs and stones in scrubs ; widely distributed and fairly plentiful.

Miriam Vale, Mt. Archer, Olsen's Caves and (c), Cania, Banban, Gympie (a) and (b), Kenilworth and North Pine River.

var. *STRANGEOIDES*, Cox.

Olsen's Caves (c), Gympie (a), and Kenilworth.

PLANISPIRA MARIÆ, Cox.

Under logs ; scarce.

Kenilworth, North Pine River.

P. CYCLOSTOMATA, Leguillou.

Under stones and logs, usually in open country ; widely distributed.

Miriam Vale, Rodds Bay, Gracemere, Calliungal, Dalgangal, Kilkivan, Gympie (a), and Kenilworth.

PANDA FALCONARI, Reeve, var. *MACONELLI*, Reeve.

Observed crawling on stones in damp shady places in scrubs ; uncommon.

Gympie (a) and (b), Kenilworth, Blackall Range and North Pine River.

PEDINGYRA CUNNINGHAMI, Gray.

The sharp edges of the broken shells of this species are used by the aboriginals of Port Curtis to polish their spears, boomerangs and waddies. The shells occurring on the mountain sides are said by Mr Blomfield to be smaller than those from the level ground. Dead shells are scattered through the scrubs in great profusion ; living animals were found under heaps of stones and drifts of dead leaves, or buried in clusters of from 3 to 6 in the soil. The species varies much in size, colour and thickness, and is widely distributed.

Miriam Vale, Warro, Cania (large), Kilkivan, Durundu (dark straw colour), Gympie (a) (very large), and North Pine River (greenish-purple colour).

var. MINOR, Mousson.

Mt. Archer.

CHLORITIS PORTERI, Cox.

Under logs ; plentiful in places.

Gympie (a) and (b), Kenilworth, Durundu and Caboolture.

C. MANSUETA, Pfeiffer.

Not plentiful.

Gympie (a) and (b), and North Pine River.

C. ARIDORUM, Cox.

Under logs and stones ; found in the dry country at Alpha buried in the sand under logs and hibernating behind a series of strong epiphragms. In this state many had been gnawed through and eaten by lizards and insects. Everywhere abundant ; very variable in size.

Facing Island, Gracemere, Olsen's Caves, Coomooboolaroo, Alpha, Bogantungan, Calliungal, Dalgangal, Banban, Kilkivan, and North Pine River.

C. BREVIPIILA, Pfeiffer.

Warro, Curtis Island, Mt. Archer and Cania.

C. BLACKMANI, Cox.

Scarce.

Miriam Vale, Warro.

HADRA ROCKHAMPTONENSIS, Cox.

Under loose bark.

Rockhampton.

var. PALLIDA, var.nov.

Bandless, of a tawny yellow colour.

Rockhampton.

Type in Australian Museum.

H. BLOMFIELDI, Cox.

Under loose bark ; gregarious.

Miriam Vale, Rockhampton, Boobeyjan, Cania, Gympie, Kenilworth and Kilkivan.

var. WARROENSIS, var.nov.

We would thus distinguish the chestnut-coloured form from Warro, figured by Tapparone Canefri in the *Malacologia* of the *Viaggio Magenta*, pl. ii., fig. 5.

H. INCEI, Pfeiffer.

Under loose bark ; gregarious. Varies much in size and elevation of the spire.

Miriam Vale, Rodds Bay, Gladstone, Olsen's Caves, Coomoolaroo, Rockhampton, Boobeyjan, Torsdale and Gympie.

var. BAYENSIS, Brazier.

Under large stones in a damp shady gully at Banban.

var. LESSONI, Pfeiffer.

Under loose bark ; gregarious.

Facing and Boyne Islands and Rockhampton.

var. AUREEDENSIS, Brazier.

Specimens from Rockhampton were received from Mr. Barnard.

H. FRASERI, Gray.

In hollow trees, under stones and loose sheets of bark lying on the ground.

Durundu and North Pine River.

H. PACHYSTYLA, Pfeiffer

Found on sandy ridges buried a few inches below the surface amongst the roots of bushes ; scarce.

Miriam Vale, Warro, Facing Island, Coomooboolaroo, Torsdale and Kilkivan.

var. DAEMELI, von Martens.

Examples from Boyne Island are even smaller than those described by von Martens from Cape York, measuring maj. diam. 28 mm., min. 23 mm., alt. 27 mm.

PAPUINA FUCATA, Pfeiffer.

Crawling on shrubs in a scrub.

Miriam Vale.

P. BIDWILLI, Pfeiffer.

None found alive, dead shells occurred plentifully in scrubs. Gympie (a) and (b), Kenilworth and North Pine River.

*BULIMUS (?) BIDWILLI, Cox.

Taken alive from leaves of trees in the scrubs ; scarce.

Miriam Vale, Warro.

STENOGYRA GRACILIS, Hutton.†

Under logs, gregarious, often buried in the ground, found hibernating beneath an epiphragm ; abundant and widely distributed.

Miriam Vale, Warro, Rodds Bay, Boyne Island, Facing Island, Curtis Island, Mt. Archer, Gracemere, Olsen's Caves, Bogantungan, Coomooboolaroo, Calliungal, Cania, Dalgangal, Banban, Kilkivan, and North Pine River.

* We submit that this is a *Papuina* allied to *fucata* and *conscendens*.

† This name of Hutton's published in 1834 (Journ. Asiat. Soc. Bengal, iii., p. 93) preceded by several years Pfeiffer's names of *subula*, *tuckeri*, etc., etc. No snail could more truthfully apply to its species Macaulay's lines,—“ By many names men call us ; In many lands we dwell.”

TORNATELLINA EUCHARIS, Brazier.

One example from Warro and two from Boyne Island were kindly determined for us by the conchologist who described the species.

P. PEDICULA, Shuttleworth.

Under stones and logs, and dead in river rubbish.

Miriam Vale, Warro, Boyne Island, Facing Island, Curtis Island, Gracemere, Bogantungan, Calliungal, Torsdale, Cania, Dalgangal, Banban and Kilkivan.

P. PACIFICA, Pfeiffer.

Under stones and logs in the open country ; abundant.

Rodds Bay, Facing Island, Gracemere, Bogantungan, Calliungal, Torsdale, Cania, Kroombit, Banban, Gympie and North Pine River.

P. KINGI, Cox.

Under loose bark at the foot of a tree.

Boyne Island, Calliungal and Dalgangal.

P. ANODONTA, n.sp.

Shell dextral, oblong ovate, imperforate, thin ; colour ? ; whorls 4, rounded, the last constituting two-thirds of the total length of the shell and showing a tendency to become uncoiled ; apex obtuse ; sculpture delicate longitudinal striæ ; suture impressed, sub-channelled ; aperture vertical, elliptical, having its major axis oblique to that of the shell, peristome entire, expanded and reflected throughout. Length 2, breadth 1 mm.



North Pine River (Musson) ; dead shells only.

Type in the Australian Museum.

We trust that the accompanying illustration will enable future observers to identify this species. The paucity of the material to

hand denies us the opportunity of dwelling upon its characteristics and affinities, but it cannot at any rate be confused with any other Australian mollusc.

CŒLIAXIS AUSTRALIS. Forbes.

Under logs and stones, &c., in scrubs; from a square yard of ground 150 specimens were obtained. Very local.

Warro, Cania and the North Pine River.

SUCCINEA ARBOREA, Adams and Angas.

Under bark on trees; common.

Rodds Bay, Curtis Island, Gracemere, Boobeyjan, Dalgangal and Kilkivan.

S. STRIGATA, Pfeiffer.

Not common.

Jericho, Bogantungan, Coomooboolaroo, Dalgangal, Torsdale, Banban and Kenilworth.

ANEITEA GRAEFFEI, Humbert,

Miriam Vale, Kilkivan and North Pine River.

GEORISSA MULTILIRIATA, Brazier.

Olsen's Caves, plentiful on the rocks; Cania, in a Birds-nest-fern (*Asplenium nidus*).

PUPINA COXI, Morelet.

Under stones in scrubs.

Olsen's Caves (c), Cania Station and Coomooboolaroo.

P. COSTATA, n.sp.

Shell costate, umbilicate, narrowly ovate, solid; colour?; whorls $5\frac{1}{2}$, rounded, the last slightly descending at the aperture, comprising half of the total length of the shell and equalling its

predecessor in width; spire regularly tapering; apex obtuse; sculpture close, oblique, sharp, threadlike longitudinal riblets, the first 2 whorls smooth, the third lightly ribbed; suture deeply impressed; umbilicus spiral, wide and shallow externally, deep and narrow within, ridged around the margin; aperture almost detached from the body whorl, vertical, circular, furnished with but one canal, which is small, shallow, and cut half across the left side of the peristome, its position coinciding with the termination of the circum-umbilical ridge, peristome reflected and expanded, broad anteriorly, narrow near the body whorl. Operculum not collected. Length 6, breadth 3 mm.



Hab.—Rejectamenta of a stream nine miles north of Gympie and at Calliungal; dead shells only (Musson).

Type in Australian Museum.

This remarkable shell differs widely from any known form. *P. coxi*, *planilabris*, and *petterdi* share its peculiar sculpture, but the lack of the anterior canal as well as its smaller size distinguish it from those species. Having the general appearance of *Bellardiella*, it wants the distinctive feature of bearing the inferior canal, “*externe et pone peristome haud in peristomate.*”

P. VENTRORSA, Dohrn.

Scarce.

Mt. Archer.

P. MERIDIONALIS, Pfeiffer.

Amongst stones in damp gullies.

Mt. Archer, Olsen's Caves and (c).

P. WILCOXI, Cox.

In rotten wood and under the bark stripped from the *Araucaria* pines by the timber-getters.

Miriam Vale, Warro, Mt. Archer, Cania, Kenilworth, Gympie (a), Caboolture and the North Pine River.

P. STRANGEI, Pfeiffer.

Under logs and leaves in scrubs; common.

Miriam Vale, Three Moon Creek, Cania, Dalgangal, Banban, Kilkivan, Gympie and the North Pine River.

DIPLOMMATINA EGREGIA, n.sp.

Shall dextral, umbilicate, elliptically ovate, thin, translucent; colour, shell white beneath an amber epidermis; whorls $5\frac{1}{2}$ regularly increasing, slightly convex, flattened beneath the suture, the last exceeding in length the remainder, slightly ascending at the aperture; sculpture, numerous, small, slightly raised, oblique ribs, of which there are about forty on the body whorl, becoming closer as the whorl proceeds, on the antepenultimate there are few, and on the earlier none, between the ribs microscopically, regularly, spirally striated; suture impressed; apex obtuse; umbilicus narrow and deep; aperture scarcely oblique, oval, rounded below, right margin of peristome narrow at the point of insertion, becoming wider and more reflected as it approaches the columella, the latter widely reflected over the perforation and terminating abruptly above, body whorl overlaid within the aperture by a slight callus. Operculum not collected. Alt. $3\frac{1}{2}$, breadth $1\frac{1}{2}$ mm.



Hab.—Calliungal (Musson); dead shells only.

Type specimens are deposited in the Australian Museum.

This species belongs to the subgenus *Arinia*, of H. and A. Adams; it has no ally in the Australian fauna, but approaches *D. minus*, Sow., and *D. scalatella*, Dohrn, from Luzon in the Philippines.

HELICINA DIVERSICOLOR, Cox.

Under stones; fairly plentiful.

Miriam Vale, Warro, Kilkivan, Gympie, Kenilworth and North Pine River.

H. GLADSTONENSIS, Cox.

Under stones in damp and shady places ; widely distributed and fairly plentiful.

Miriam Vale, Mt. Archer, Olsen's Caves, Calliungal, Cania, Dalgangal, Banban, Kilkivan, and Gympie (a).

LIMNEA LESSONI, Deshayes.

Variable, plentiful, and widely distributed.

Miriam Vale, Warro, Gracemere, Rockhampton, Jericho, Torsdale, Cania, Dalgangal and Banban.

var. *ANGASI*, Sowerby.

Durundu.

BULINUS BEDDOMEI, Nelson and Taylor.

Plentiful and variable.

Rockhampton.

B. REEVEI, Ad. and Ang., var. *TRUNCATUS*, H. Adams.
Boyne Island and Lake Victoria, Calliungal.

var. *OBESUS*, H. Adams.

Coomooboolaroo.

B. PROTEUS, Sowerby.

Miriam Vale, Facing and Curtis Islands, Gracemere, Coomoo-boolaroo, Rockhampton, Torsdale, Dalgangal, Gympie, Kroombit, Calliungal, Durundu and North Pine River.

B. PECTOROSUS, Conrad.

Jericho.

B. MAMILLATUS, Sowerby.

Rockhampton.

B. KREFFTI, Clessin.

Rockhampton.

B. GRACILENTUS, E. A. Smith.

Jewel Creek, Rockhampton.

B. PRODUCTUS, E. A. Smith.

Durundu.

B. PRYAMIDATUS, Sowerby.

Gracemere.

B. FUSIFORMIS, Nelson and Taylor.

Facing Island.

The above forms of *Bulinus* are recorded, but the writers do not endorse their claims to specific rank, which in some instances are extremely shadowy. Upon few genera has synonymy, that curse of Babel upon science, fallen heavier than upon the Australian *Bulinus*. The bewildering multiplicity of names applied to a few protean forms needs most careful sifting by a local student; any foreign author who should attempt the task with but a handful of material would make confusion worse confounded.

ANCYLUS AUSTRALICUS, Tate.

Torsdale.

PLANORBIS GILBERTI, Dunker.

Plentiful.

Miriam Vale, Gracemere, Coomooboolaroo, Bogantungan, Calliungal, Cania and Banban.

SEGMENTINA VICTORIÆ, E. A. Smith.

Coomooboolaroo, Calliungal and Banban.

MELANIA TATEI, Brazier.

Miriam Vale, Warro, Gracemere, Jewel Creek, Rockhampton, Coomooboolaroo, River Medway, Bogantungan, Lake Victoria, River Dee, Calliungal and Banban.

M. DENISONIENSIS, Brot.

Jewel Creek, Rockhampton.

M. QUEENSLANDICA, E. A. Smith.

Colosseum Creek, Miriam Vale.

HYDROBIA BRAZIERI, E. A. Smith.

River Barambah at Banban, Calliungal.

BYTHINIA TRYONI, E. A. Smith.

Three Moon Creek and Dalgangal.

LARINA STRANGEI, A. Adams.

Banban.

VIVIPARA SUBLINEATA, Conrad.

Jordan Creek, Jericho. Two specimens.

V. ESSINGTONENSIS, Shuttleworth.

Scrubby Creek, Gracemere, Rockhampton, Coomooboolaroo and Kroombit Creek.

SPHÆRIUM QUEENSLANDICUM, E. A. Smith.

Colosseum Creek, Miriam Vale, Curtis Island, Coomooboolaroo and Calliungal.

CORBICULA OVALINA, Deshayes.

Rockhampton, Scrubby Creek, Gracemere, Lake Victoria, River Dee, Calliungal, River Mary, Gympie (a), Dalgangal and Banban

C. MINOR, Prime.

Scrubby Creek and Lagoon, Gracemere, Lake Victoria and River Dee, Calliungal.

UNIO AUSTRALIS, Lamarck.

Gracemere, Jordan Creek, Jericho, Alpha, Dalgangal, Banban and Durundu.

U. DEPRESSUS, Lamarck, var. *ANGASI*, Lea.

Miriam Vale, Granite Creek, Warro, Mary River, Gympie (a).

var. *MUTABILIS*, Lea.

Mary River at Kenilworth.

U. NOVÆ-HOLLANDIÆ, Gray.

Granite Creek, Warro, Dee River, Calliungal, and Mary River, Gympie (a).